



## Service Manual for Mini Centrifuge Z 130 M

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## 5 SERVICE INSTRUCTIONS

### 5.1 General technical description

Model **Z 130 M** is a compact centrifuge.

**Please follow below mentioned safety instructions for any kind of service actions:**

- Do not leave units unsupervised, when parts of the housing have been removed and the unit is still connected to the main power supply.
- Do not bypass the lid's safety contacts and never work with the unit's lid open.
- The VDE regulations are valid for all electrical work that has to be done.

### 5.2 Electrical and electronically components

#### 5.2.1 Circuit board

The circuit board is serving the low voltage supply of the centrifuge control system, which is integrated in the board.

The board can only be exchanged complete.

If there is a defect you have to exchange the complete board.

All signal lines lead to the circuit board.

#### 5.2.2 Transformator

The transformator is serving the low voltage supply of the centrifuge control system.

#### 5.2.3 Lid contact

The micro switch in the mechanism of the lid lock controls the correct closing of the centrifuge lid.

The switch may never be bypassed.

### 5.3 Mounting support

**After performing any kind of assembling work, please make sure all the grounded contacts are connected correctly!**

#### 5.3.1 Removing the rotor

- Place the centrifuge on a clean, level and stable surface.  
Unplug the power cord and remove the blue rotor by loosening the set screw (approx. 5 complete revolutions) with an allen key (1.5mm). Then pull the rotor off the motor shaft.

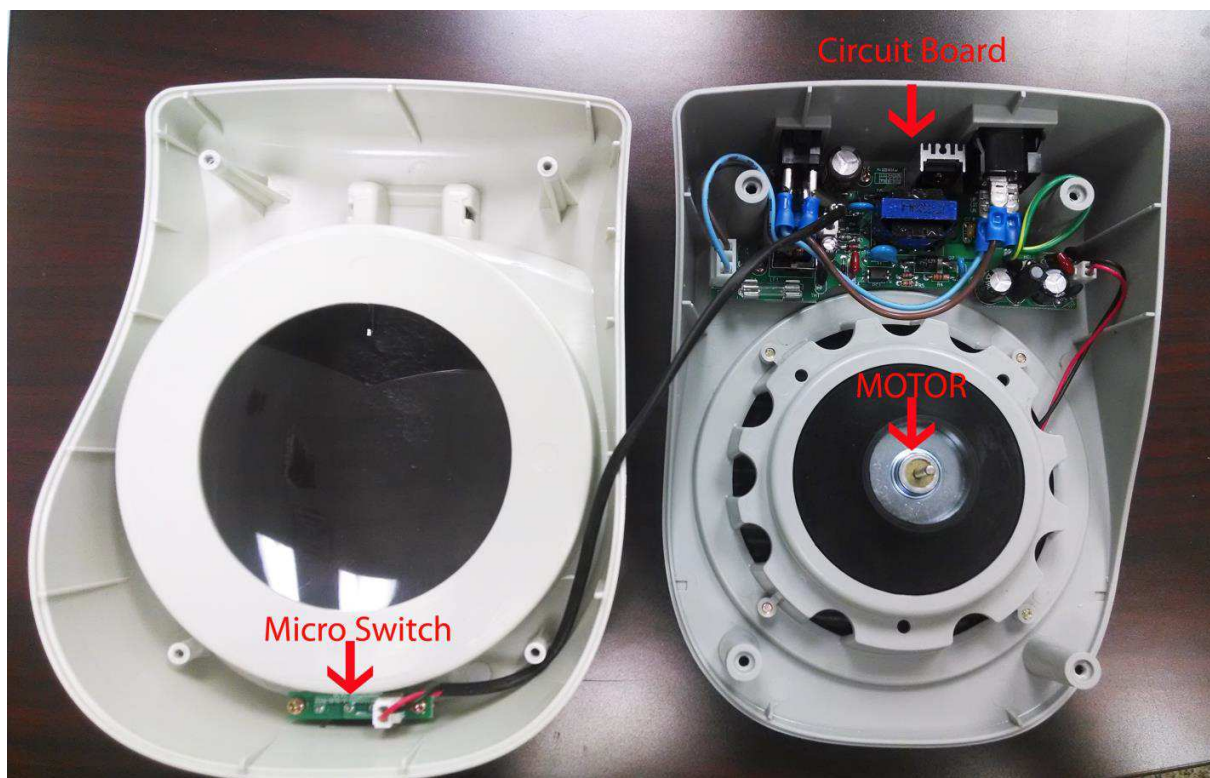
#### 5.3.2 Removing the housing

- Close the lid and turn the centrifuge upside down to remove the four screws (inside the four rubber feet). This housing can then be disassembled for access to the components
- Re-assemble the unit in reverse order.

## 5 SERVICE INSTRUCTIONS

### 5.3.3 Removing the circuit board

- The Circuit Board can be removed by unscrewing the three phillips screws and lifting upward. (First, please unplug the three wire terminal connectors).



### 5.3.4 Replacing the micro switch

- The Micro Switch can be removed by unscrewing the two phillips screws. (First, please remove the one wire terminal connector).

### 5.3.5 Replacing the motor

- Remove the housing as described above.
- Remove the connection cable to the motor on the circuit board.
- The Motor can be removed by unscrewing the four phillips screws on the BOTTOM of the lower housing. Once unscrewed the rubber base can be separated from the housing and the motor can be lifted off.
- Re-assemble the unit in reverse order.

## 6 TROUBLE SHOOTING

### 6.1 Error Cause / Solution

#### **Preface:**

The error cause are listed to help localize possible errors faster.

The diagnose referred to in this chapter may not always be the case, as they are only theoretically occurring errors and solutions.

Always, please keep us informed about any kind of error occurring, which is not listed in this chapter. Only through your information we are able to improve and complete this service manual.

Many thanks in advance for your support.

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### 6.2 Survey of possible error and their solutions

#### **Unit does not spin:**

- Check that the plug is fully connected
- Check that the lid tab is not broke and is making contact with the micro switch
- Replace the motor
- Replace the circuit board

#### **Lid will not stay closed**

- Check that the lid tab has not been cracked, bent or broken
- Check that the lid release tab (on the main housing has not been cracked bent or broken

#### **The Centrifuge is Noisy**

- Ensure that the set screw in the motor has been tightened
- Ensure that the rotor is properly centered and not rubbing on the inside chamber

### 7.1 Service and maintenance

#### 7.1.1 Maintenance and cleaning

##### **Maintenance:**

Maintenance of the centrifuge is confined to keeping the rotor, the rotor chamber and the rotor accessories clean as well as to regularly lubricating the rotor insert bolts of a swing out rotor (if available).

Vaseline, available in nearly each store, is the most suitable lubricant. The Vaseline must be free of resin and acids. Lubricants containing molybdate and graphite are not allowed.

Please pay special attention to anodized aluminium parts. Breakage of rotors can be caused even by slightest damages.

In case of rotors, buckets or tube racks getting in touch with corrosive substances the concerned spots have to be cleaned carefully.

Corrosive substances are for instance:

- Alkalies
- Alkaline soap solutions
- Alkaline amines
- Concentrated acids
- Solutions containing heavy metals
- Water-free chlorinated solvents
- Saline solutions, e.g. salt water

##### **Cleaning:**

Thorough cleaning not only has its purpose in hygiene but also in avoiding corrosion based pollution.

In order to avoid damaging anodized parts such as rotors, reduction plates etc., only pH-neutral detergents with a pH-value of 6-8 may be used for cleaning. Alkaline cleaning agents (pH-value > 8) must not be used.

After cleaning, please ensure all parts are dried thoroughly, either by hand or in a hot-air cabinet (max. temperature + 50°C).

It is necessary to coat anodized aluminium parts with anti-corrosion oil regularly in order to increase their life-spans and reduce corrosion predisposition.

Due to humidity or not hermetically sealed samples, condensate may be formed. The condensate has to be removed from the rotor chamber with a soft cloth regularly.

**The maintenance procedure has to be repeated every 10 to 15 runs, but at least once a week!**

## 7 MAINTENANCE

### 7.1.2 Glass breakage

With high g-values, the rate of glass tube breakage increases. Glass splinters have to be removed immediately from rotor, buckets, adapters and the rotor chamber itself. Fine glass splinters will scratch and therefore damage the protective surface coating of a rotor.

If glass splinters remain in the rotor chamber, fine metal dust will build up due to air circulation. This very fine, black metal dust will extremely pollute the rotor chamber, the rotor, the buckets and the samples.

### 7.1.3 Desinfection

In case of infectious material spilling into the centrifuge, the rotor and rotor chamber have to be disinfected right after the run. Rotors may be autoclaved at a maximum temperature 121°C, except rotor 220.58 V08, which must not be autoclaved.

The rotor and rotor chamber should be cleaned with a universal, neutral disinfection agent, e. g. on formalin base. A disinfection spray is most suitable in order to easily reach all difficult to access spots.

#### ATTENTION:

**Before applying any other cleaning resp. decontamination method than recommended by the manufacturer, contact the manufacturer to ensure yourself, you would not damage the unit or the rotor by applying the designated method!**

## 8 SPARE PART LIST



### Z 130 M

Article	Order No.	Ident.-no.
Circuit board	914.030	C1012-CB
Motor	924.010	C1012-Mot
Lid	934.043	C1012-Lid
Lid spring	934.044	C1012-spring
Housing top	934.045	C1012-housing top
Housing bottom	934.046	C1012-housing bottom